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## SECTION 15440 - PLUMBING FIXTURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes plumbing fixtures and trim, faucets, other fittings, and related components.

#### 1.3 DEFINITIONS

- A. Accessible: Plumbing fixture, building, facility, or portion thereof that can be approached, entered, and used by physically handicapped, disabled, and elderly people.
- B. Fitting: Device that controls flow of water into or out of plumbing fixture. Fittings specified in this Section include supplies and stops, faucets and spouts, shower heads and tub spouts, drains and tailpieces, traps and waste pipes. Pipe fittings, tube fittings, and general-duty valves are included where indicated.

#### 1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each plumbing fixture category and type specified. Include selected fixture, trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.
- C. Wiring diagrams from manufacturer for electrically operated units.
- D. Maintenance data for plumbing fixtures and components to include in the operation and maintenance manuals specified in Division 1.

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1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category from one source and by a single manufacturer.
  - 1. Exception: Where fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for this category.
- B. Regulatory Requirements: Comply with requirements of CABO A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; regarding plumbing fixtures for physically handicapped people.
- C. Energy Policy Act Requirements: Comply with requirements of Public Law 102-486, "Energy Policy Act," regarding water flow rate and water consumption of plumbing fixtures.
- D. Listing and Labeling: Provide electrically operated fixtures and components specified in this Section that are listed and labeled.
  - 1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
  - 2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.
- E. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.
- F. Product Options: Drawings indicate size, profiles, dimensional requirements, and characteristics of plumbing fixtures and are based on specific types and models indicated. Other manufacturers' fixtures with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver plumbing fixtures in manufacturer's protective packing, crating, and covering.
- B. Store plumbing fixtures on elevated platforms in dry location.

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1.7 PROJECT CONDITIONS

- A. Field Measurements: Coordinate roughing-in and final fixture locations and verify that plumbing fixtures can be installed to comply with original design and referenced standards.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:

1. Water Closets:
  - a. American Standard, Inc.
  - b. Crane Plumbing/Flat Products.
  - c. Kohler Co.
2. Urinals:
  - a. American Standard, Inc.
  - b. Crane Plumbing/Flat Products.
  - c. Kohler Co.
3. Lavatories:
  - a. American Standard, Inc.
  - b. Crane Plumbing/Flat Products.
  - c. Kohler Co.
4. Sinks:
  - a. American Standard, Inc.
  - b. Crane Plumbing/Flat Products
  - c. Elkay Manufacturing Co.
  - d. Just Manufacturing Co.
  - e. Kohler Co.
5. Service Sinks:

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- a. American Standard, Inc.
  - b. Crane Products/Flat Products
  - c. Kohler Co.
6. Mop Basins:
- a. Aqua Glass Corp.
  - b. Crane Plumbing/Flat Products.
  - c. Florestone Products Co., Inc.
  - d. Stern-Williams Co., Inc.
7. Clinic Flush Sinks:
- a. Crane Plumbing/Flat Products
  - b. American Standard, Inc.
  - c. Kohler Co.
8. Water Coolers:
- a. Elkay Manufacturing Co.
  - b. Halsey Taylor; A household International Co.
  - c. Haws Drinking Faucet Co.
  - d. Sunroc Corp.
  - e. Western Drinking Fountains; Sunroc Corp.
9. Emergency Equipment:
- a. Bradley Corp.
  - b. Haws Drinking Faucet Co.
  - c. Western Drinking Fountains; Sunroc Corp.
10. Toilet Seats:
- a. Bemis Mfg. Co.
  - b. Beneke Div.; Sanderson Plumbing Products, Inc.
  - c. Church Seat Co.
  - d. Kohler Co.
  - e. Olsonite Corp.
11. Flushometers:
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- a. Coyne & Delany Co.
  - b. Sloan Valve Co.
  - c. Zurn Industries, Inc.; Flush Valve Operations.
12. Commercial/Industrial Cast-Brass Faucets:
- a. American Standard, Inc.
  - b. Chicago Faucet Co.
  - c. Crane Plumbing/Flat Products.
  - d. Kohler Co.
  - e. T & S Brass and Bronze Works, Inc.
13. Pressure Balance Bath/Shower Faucets:
- a. American Standard, Inc.
  - b. Bradley Corp.
  - c. Chicago Faucet Co.
  - d. Crane Plumbing/Flat Products.
  - e. Kohler Co.
  - f. Leonard Valve Co.
  - g. Powers Process Controls; A Unit of Mark Controls Corp.
  - h. Speakman Co.
  - i. Symmons Industries, Inc.
14. Shower Receptors:
- a. Aqua Glass Corp.
  - b. Crane Plumbing/Fiat Products.
  - c. Florestone Products Co., Inc.
  - d. Stern-Williams Co., Inc.
15. Miscellaneous Fittings (Except Faucets):
- a. Brass Craft Subsidiary ; Masco Co.
  - b. Chicago Faucet Co.
  - c. Crane Plumbing/Flat Products.
  - d. Kohler Co.
  - e. T & S Brass and Bronze Works, Inc.
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16. Supports:
- a. Ancon, Inc.
  - b. Josam Co.
  - c. Smith (Jay R.) Mfg. Co.
  - d. Wade Div.; Tyler Pipe.
  - e. Zurn Industries, Inc.; Hydromechanics Div.

17. Showers:
- a. Kohler Co.
  - b. Crane Plumbing/Flat Products
  - c. American Standard, Inc.
  - d. Continental Water Conditioning Corp.
  - e. Bradley

18. Floor Sinks:
- a. American Standard, Inc.
  - b. Crane Products/Flat Products
  - c. Kohler Co.

## 2.2 PLUMBING FIXTURE STANDARDS

- A. Comply with applicable standards below and other requirements specified.
- 1. Electric Water Coolers: ARI 1010 and UL 399.
  - 2. Emergency Equipment: ANSI Z358.1.
  - 3. National Sanitation Foundation Construction: NSF 2.
  - 4. Stainless-Steel Fixtures Other than Service Sinks: ASME A112.19.3M.
  - 5. Vitreous-China Fixtures: ASME A112.19.2M.

## 2.3 LAVATORY/SINK FAUCET STANDARDS

- A. Comply with ASME A112.18.1M and other requirements specified for lavatory, sink, and similar-type-fixture faucet fittings. Include hot- and cold-water indicators; 2.5-gpm- (0.16-L/s-) maximum flow rate; and polished, chrome-

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plated finish; except where otherwise indicated. Coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor.

## 2.4 SHOWER FAUCET STANDARDS

- A. Comply with ASME A112.18.1M and other requirements specified for shower faucet fittings. Include hot- and cold-water indicators; ~~2.5-gpm-~~ (0.16-L/s-) maximum flow rate; and polished, chrome-plated finish; except where otherwise indicated. Coordinate faucet inlets with supplies and outlet with shower head, arm, and flange.
  - 1. Combination, Pressure-Equalizing- and Thermostatic-Control, Antiscald Faucets: ASSE 1016.
  - 2. Hand-Held Showers: ASSE 1014.
  - 3. Hose-Coupling Threads: ASME B1.20.1 or ASME B1.20.7.

## 2.5 MISCELLANEOUS FITTING STANDARDS

- A. Comply with ASME A112.18.1M and other requirements specified for fittings, other than faucets. Include polished, chrome-plated finish, except where otherwise indicated. Coordinate fittings with other components and connectors.
  - 1. Atmospheric Vacuum Breakers: ASSE 1001.
  - 2. Manual-Operation Flushometers: ASSE 1037.

## 2.6 FITTINGS

- A. Fittings for Plumbing Fixtures: Refer to plumbing fixture schedules for materials for supplies, supply stops, supply risers, traps, and other fittings

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine roughing-in for potable, hot- and cold-water supply piping systems; soil, waste, and vent piping systems; and supports. Verify that locations and sizes of piping and locations and types of supports match those indicated,

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before installing and connecting fixtures. Use manufacturer's roughing-in data when roughing-in data are not indicated.

- B. Examine walls, floors, and cabinets for suitable conditions where fixtures are to be installed.
- C. Do not proceed until unsatisfactory conditions have been corrected.

### 3.2 APPLICATIONS

- A. Include supports for plumbing fixtures according to the following:
  - 1. Carriers: For wall-hanging water closets and fixtures supported from wall construction.
  - 2. Fabricate reinforcement from 2-by-4-inch or 2-by-6-inch (38-by-89-mm or 38-by-140-mm) fire-retardant-treated-wood blocking between studs or 1/4-by-6-inch (6.35-by-152.4-mm) steel plates attached to studs and floor. Secure water closet fixtures to floor with ½" (13mm) all thread, washers, and lock nuts. Do not use concrete fasteners or anchors. All thread shall will extend through the floor and beyond ends of fixture mounting bracket .
- B. Include fitting insulation kits for accessible fixtures according to the following:
  - 1. Lavatories: Cover hot- and cold-water supplies, stops and handles, drain, trap, and waste to wall.

### 3.3 PLUMBING FIXTURE INSTALLATION

- A. Assemble plumbing fixtures and trim, fittings, faucets, and other components according to manufacturers' written instructions.
- B. Install fixtures level and plumb according to manufacturers' written instructions, roughing-in drawings, and referenced standards.
- C. Install wall-hanging, back-outlet water closets with support manufacturer's tiling frame or setting gage.
- D. Install toilet seats on water closets.
- E. Install wall-hanging, back-outlet urinals with gasket seals.



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- F. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment.
  - G. Fasten wall-hanging plumbing fixtures securely to supports attached to building substrate when supports are specified, and to building wall construction where no support is indicated.
  - H. Fasten counter-mounting plumbing fixtures to casework.
  - I. Secure supplies to supports or substrate within pipe space behind fixture.
  - J. Set shower receptors and mop basins in leveling bed of cement grout.
  - K. Install individual stop valve in each water supply to fixture. Use gate or globe valve where specific stop valve is not specified.
  - L. Install water-supply stop valves in accessible locations.
  - M. Install faucet, flow-control fittings with specified flow rates and patterns in faucet spouts when faucets are not available with required rates and patterns. Include adapters when required.
  - N. Install shower, flow-control fittings with specified maximum flow rates in shower arms.
  - O. Install traps on fixture outlets. Omit traps on fixtures having integral traps.
  - P. Install hot-water dispensers in back top surface of sink or in counter with spout over sink.
  - Q. Install escutcheons at wall, floor, and ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons where required to conceal protruding pipe fittings.
  - R. Seal joints between fixtures and walls, floors, and counters using sanitary-type, 1-part, mildew-resistant, silicone sealant according to sealing requirements specified in Division 7 Section "Joint Sealants." Match sealant color to fixture color.

### 3.4 CONNECTIONS

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties. The following are specific connection requirements:

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- 1. Install piping connections between plumbing fixtures and piping systems and plumbing equipment specified in other Division 15 Sections.
  - B. Ground equipment.
    - 1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
  - C. Arrange for electric-power connections to fixtures and devices that require power. Electric power is specified in Division 16 Sections.

### 3.5 ADJUSTING AND CLEANING

- A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.
- B. Operate and adjust hot-water dispensers, and controls. Replace damaged and malfunctioning units and controls.
- C. Adjust water pressure at drinking fountains, electric water coolers, faucets, shower valves, and flushometer valves having controls, to produce proper flow and stream.
- D. Replace washers and seals of leaking and dripping faucets and stops.
- E. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Include the following:
  - 1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
  - 2. Remove sediment and debris from drains.

### 3.6 PROTECTION

- A. Provide protective covering for installed fixtures and fittings.
- B. Do not allow use of fixtures for temporary facilities, except when approved in writing by Owner.

### 3.7 FIXTURE SCHEDULE

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- A. General: Plumbing fixtures specified by this section are described in the "Plumbing Schedule" on drawing sheet P1.1. and P1.2.

END OF SECTION 15440